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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,591	07/05/2001	Gregory S. Marczak		4021
24335	7590	10/16/2003	EXAMINER	
WARNER NORCROSS & JUDD LLP 900 FIFTH THIRD CENTER 111 LYON STREET, N.W. GRAND RAPIDS, MI 49503-2487			CULBERT, ROBERTS P	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/899,591	MARCZAK ET AL.	
	Examiner	Art Unit	
	Roberts Culbert	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 13-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 13-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. | 6) <input type="checkbox"/> Other: _____. |

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DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/15/03 have been fully considered.

Applicant's arguments regarding the rejections over U.S. Patent 4,367,122 to Bednarz and U.S. Patent 5,367,196 to Mahulikar have been considered, but are moot in view of the new grounds of rejection that follow.

Applicant has argued that Berdan fails to teach preventing the etching composition from etching the second side by applying fluids against the second side. The argument is not persuasive because Berdan does show preventing the etching composition from etching the second side by applying fluids against the second side. Although the second side is being etched before the fluids are applied, the fluids prevent the second side from being etched further by the film of etchant that remains on the film after being removed from the bath. Therefore the limitation of preventing the etching composition from etching the second side by applying fluids against the second side is met as broadly claimed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding Claims 1 and 13, Applicant has described in the specification a process in which a sheet of aluminum that has been anodized on both sides is etched. However, applicant has not described any process that treats a sheet or web of aluminum that has been anodized on one side.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 1, the phrase "*etching the first side to dissolve, and thereby roughen a portion of the anodic layer*" is unclear because the phrase indicates that the same portion of the anodic layer is both dissolved and roughened. The description of the invention, however clearly teaches that a portion of the anodic layer is dissolved, and the remaining portion is thereby roughened.

Claim 1 also ends with the phrase "*during said anodizing on the first side, but not the second side*". It is unclear if "*but not the second side*" refers to the step of anodizing or the step of etching.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the process of anodizing an unanodized sheet or web must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, 7, 8, 13, 14, 15, 20, 21, 23, 24, 25, 26, 27, 28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al.

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Arrowsmith teaches a method for treating aluminum comprising a first anodization step (Col. 4, lines 31-35) in sulfuric or chromic acid, followed by an etching step (Col. 4, Lines 52-55) using phosphoric, chromic or a mixture of sulfuric and chromic acids. The acid etching step is used to dissolve and thereby roughen the outer portion of the oxide coating formed in the anodization step. (Col. 4, Lines 59-63) Arrowsmith teaches etching in a phosphoric acid at a temperature of 60°C (140°F) for a period of 1 minute (Col. 4, Lines 52-58).

Arrowsmith does not teach application of the process to a continuous web of aluminum, however this step would have been obvious to one of ordinary skill in the art at the time of invention in order to provide commercial aluminum (Col. 4, lines 15-18) with a surface that will strongly adhere to coatings (Col. 1, Lines 15-24).

Regarding Claim 7, since the etching composition and material to be etched are the same in both the prior art references and the claimed invention, it may be assumed that either the bonding layer would be inherently formed about 4-10 nanometers in depth as claimed, or that the claimed feature arises from essential limitations not present in the claim. Furthermore, manipulating the known process variables such as etchant concentration, time and temperature to optimize adhesion strength would be routine experimentation to one of ordinary skill in the art and would be expected to produce a surface with the claimed bonding layer.

Regarding the limitation (Claims 13 and 23) of selectively etching one side of the anodized aluminum, Official Notice is taken of the fact that applications requiring a bonding surface on only one side of an aluminum substrate are well-known in the art of producing aluminum for commercial use. Furthermore, Official Notice is taken that techniques for selectively treating one-side of a sheet or web of metal are well known in the art of producing metallic foils. It would therefore have been obvious to apply the method of Arrowsmith to one side of an aluminum sheet or web in order to provide commercial aluminum for such applications. One of ordinary skill in the art would have been motivated to etch only one side of the sheet or web, in order to reduce the amount of etchant needed in the process as well as retaining the sulfuric acid anodized surface that is easily colored and provides a decorative finish as such applications are also well known in the art. See background of instant application.

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Regarding the limitation (Claims 6, 15, and 25) of applying the etching composition to one side of the sheet or web using an application technique selected from cascading, misting, spraying, dipping, rolling and brushing, Official Notice is taken of the fact that the claimed techniques are old and well known in the etching art as alternative methods of applying a liquid etchant to a substrate. It would have been obvious to one of ordinary skill in the art at the time of invention to use the well-known methods in order to etch the sheet or web in the conventional manner.

Claims 3, 19, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in view of U.S. Patent 3,898,095 to Berdan et al.

As applied above, Arrowsmith discloses the method of the invention substantially as claimed, but does not teach preventing the etching composition from contacting the second side by applying fluids against the second side.

Referring to the sole figure, Berdan teaches a method for etching a continuous web of aluminum (10) having a first side and a second side that includes preventing the etching composition from contacting the second side by applying fluids (22) against the second side. See also (Col. 3, Lines 41-49).

It would have been obvious to one of ordinary skill in the art to prevent the etching composition from contacting the second side by applying fluids against the second side as shown by Berdan in order to prevent unwanted etching of the second side.

Claims 4, 16, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in view of U.S. Patent 4,124, 437 to Bond et al.

As applied above, Arrowsmith discloses the method of the invention substantially as claimed, but does not teach preventing the etching composition from contacting the second side by masking the second side with a film or sheet.

Bond teaches a method for selectively etching one side of continuous metallic work-piece by covering one side with a removable protective film. See abstract and (Col. 3, Lines 21-29).

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It would have been obvious to one of ordinary skill in the art at the time of invention to use the protective film as shown by Bond in order to prevent unwanted etching of the second side from the etching composition contacting the first side.

Claim 5, 17, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in view of U.S. Patent 4,013,498 to Frantzen et al.

As applied above, Arrowsmith discloses the method of the invention substantially as claimed, but does not teach preventing the etching composition from contacting the second side by covering the second side with a protective shield.

Frantzen teaches covering a sheet of metallic material with a removable shield on one side to prevent contact with an etching composition. See Abstract.

It would have been obvious to one of ordinary skill in the art at the time of invention to use the shield as shown by Frantzen in order to prevent unwanted etching of the second side from the etching composition contacting the first side.

Claims 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in view of JP 60166262.

As applied above, Arrowsmith teaches the method of the invention substantially as claimed, but does not show an etching composition including sodium hydroxide.

JP 60166262 teaches that an aluminum oxide surface may be made rough by using a sodium hydroxide etchant.

It would have been obvious to one of ordinary skill in the art at the time of invention to use an etching composition of sodium hydroxide in order to roughen the aluminum oxide surface of Arrowsmith and improve adhesion of coatings applied.

Regarding the limitations of molar concentration and etch time, a person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify Arrowsmith in view of JP 60166262 by using different processing parameters because same were known to be cause effective

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variables and routine experimentation would have been expected to optimize them. *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in further view of U.S. Patent 5,945,351 to Mathuni

Referring to figure 1, Mathuni teaches a method for selectively etching one surface (14) of a work-piece while preventing the etching composition (15) from contacting the other surfaces (12, and 13) by blowing a protective gas (16) against the other surfaces (Col. 4, Lines 1-2).

It would have been obvious to one of ordinary skill in the art to prevent the etching composition from contacting selected surfaces by applying a protective gas as shown in the invention of Mathuni against the surfaces in order to prevent unwanted etching of the surfaces from the etching composition contacting the at least one surface.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,624,752 to Arrowsmith et al. in view of U.S. Patent 3,898,095 to Berdan and U.S. Patent 4,124,437 to Bond.

As applied above, Arrowsmith discloses the method of the invention substantially as claimed, but does not teach covering a decorative side with a film and dipping the aluminum article in an etching composition.

Bond teaches a method for selectively etching one side of continuous metallic work-piece by covering one side with a removable protective film. See abstract and (Col. 3, Lines 21-29).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the protective film as shown by Bond in order to prevent unwanted etching of the second side from the etching composition contacting the first side.

Bond does not teach dipping the aluminum article in a etching composition. Bond shows application of the etching composition by spraying.

Referring to the sole figure, Berdan does teach that a continuous web of aluminum may be uniformly etched by dipping in an etching composition.

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It would have been obvious to one of ordinary skill in the art at the time of invention to use the dipping method with the protective film of Bond in order to insure complete coverage of the etching composition in the well-known manner.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (703) 305-7965. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

R. Culbert



GREGORY MILLS
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